

# **Plaintiffs' Exhibit 16**

## **(Redacted)**

IN THE UNITED STATES DISTRICT COURT  
FOR THE EASTERN DISTRICT OF VIRGINIA

Civil Action No: 1:23-cv-00108-LMB-JFA

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UNITED STATES, et al.,

Plaintiffs,

v.

GOOGLE LLC,

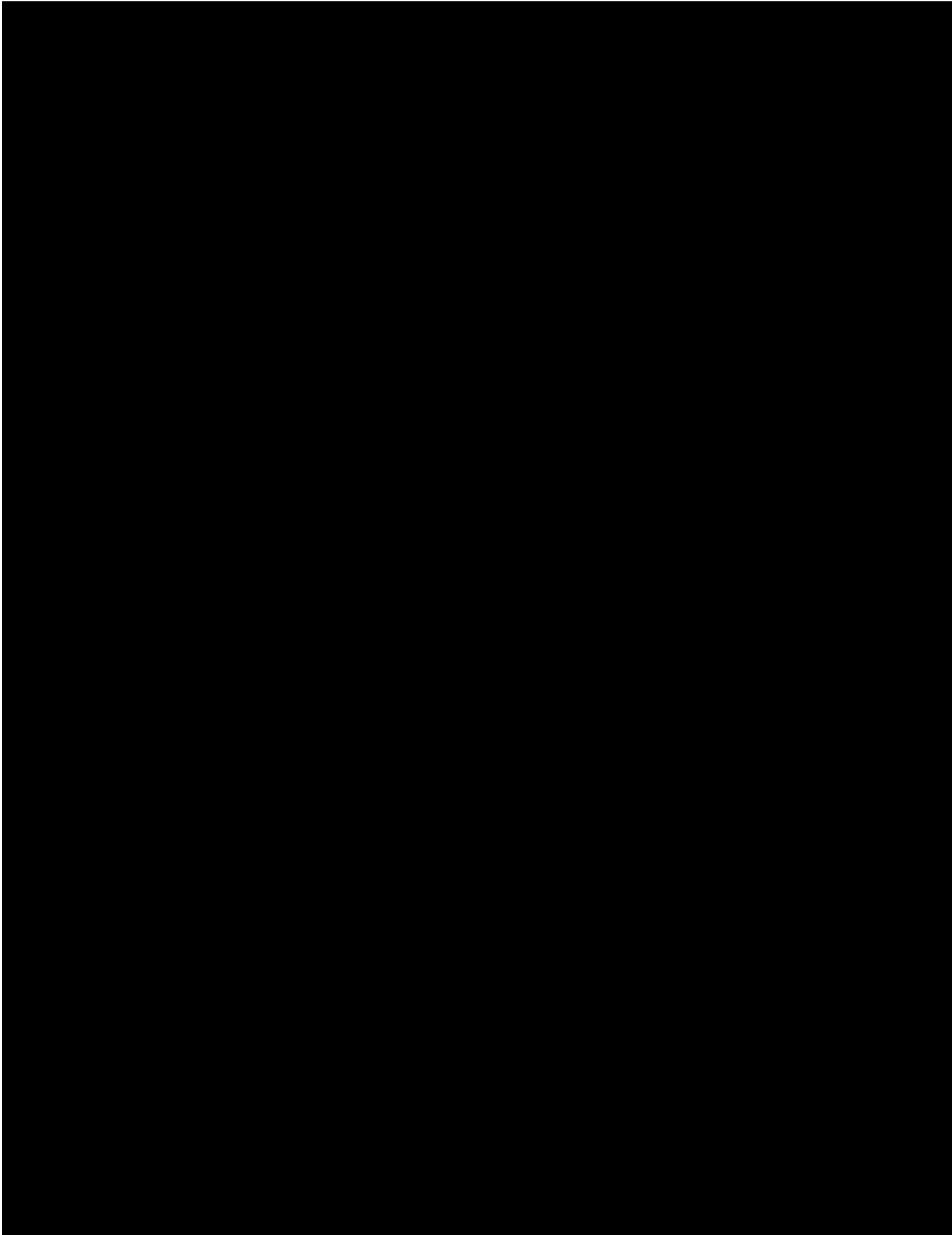
Defendant.

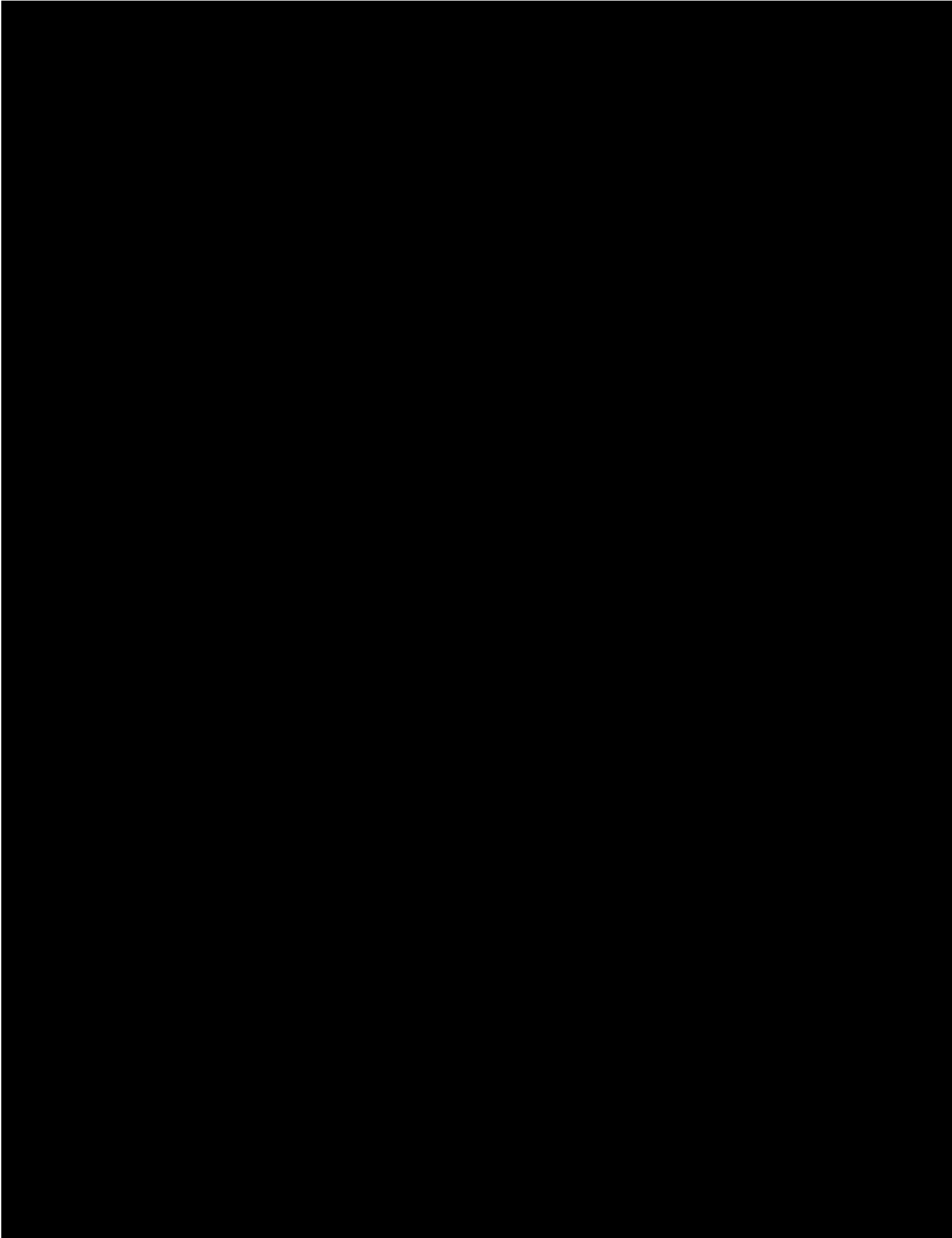
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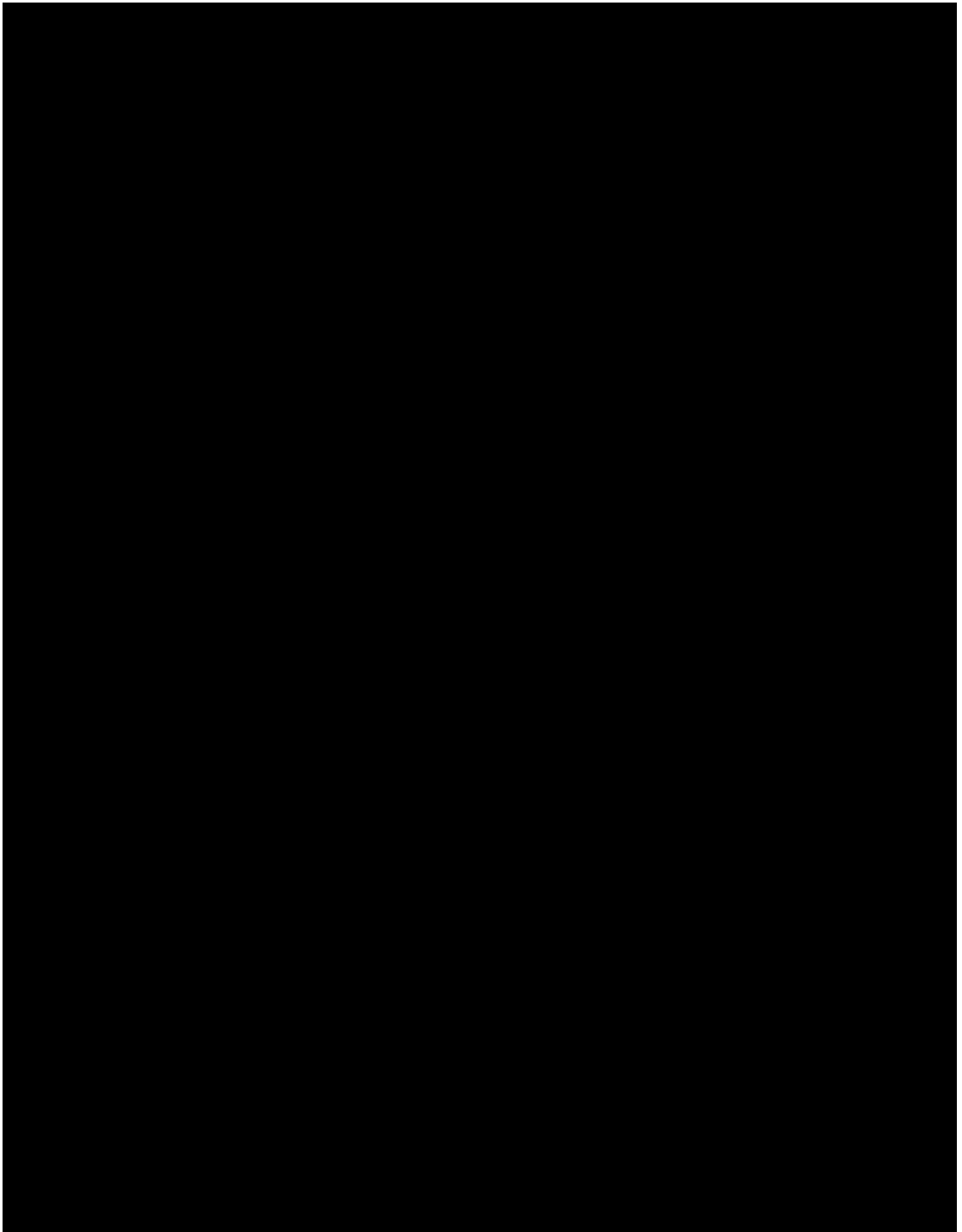
CONFIDENTIAL VIDEOTAPED DEPOSITION OF TIM CRAYCROFT

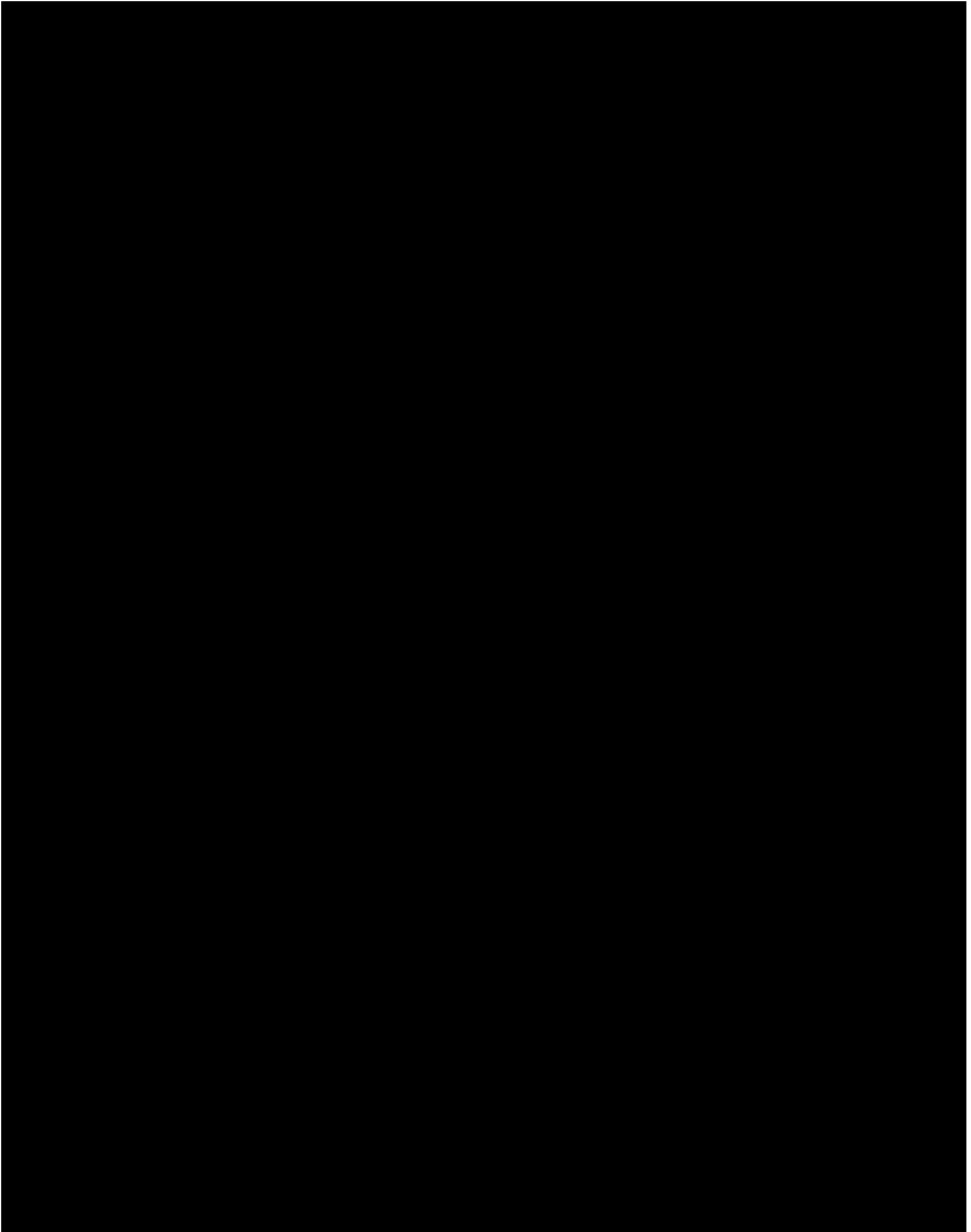
August 15, 2023

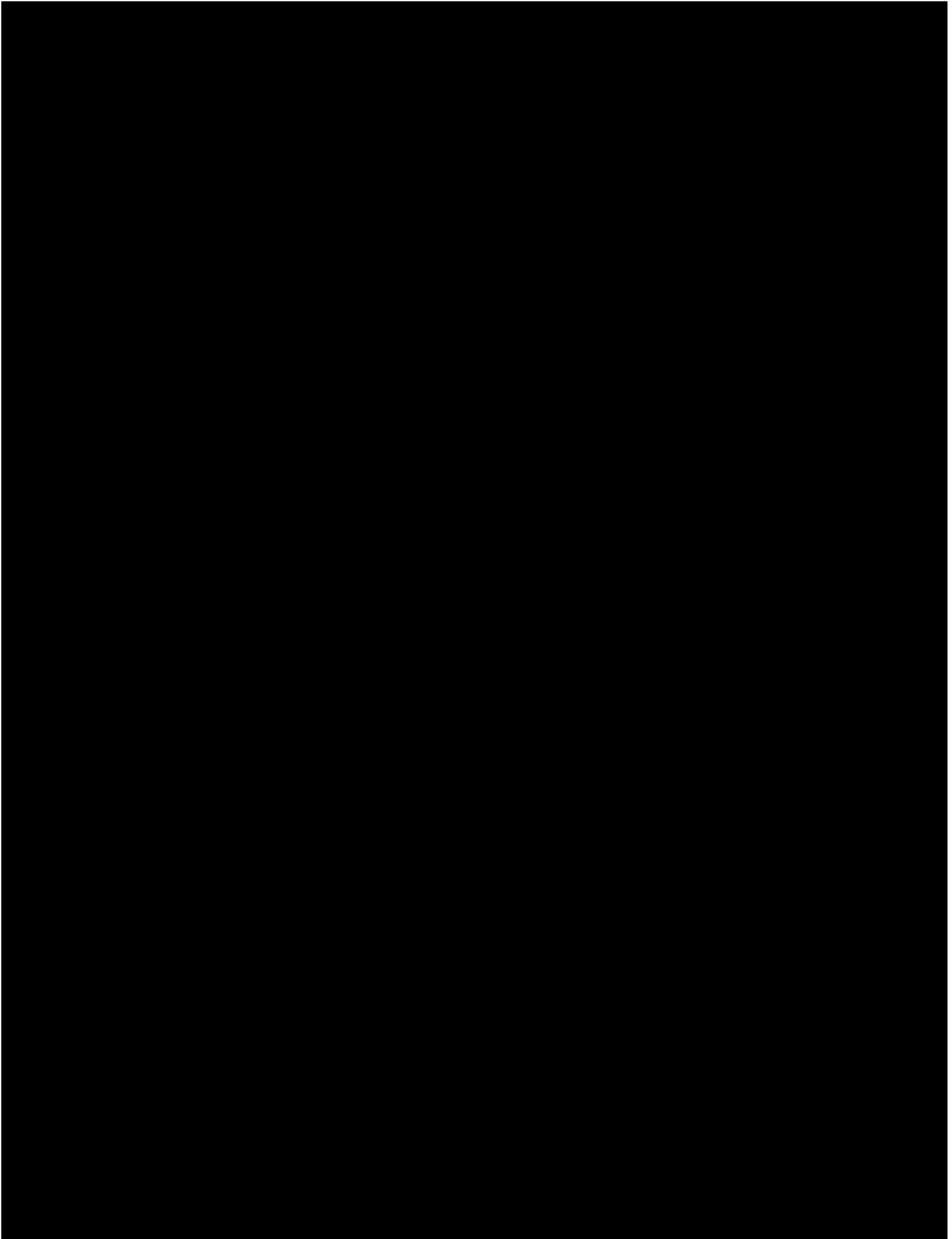
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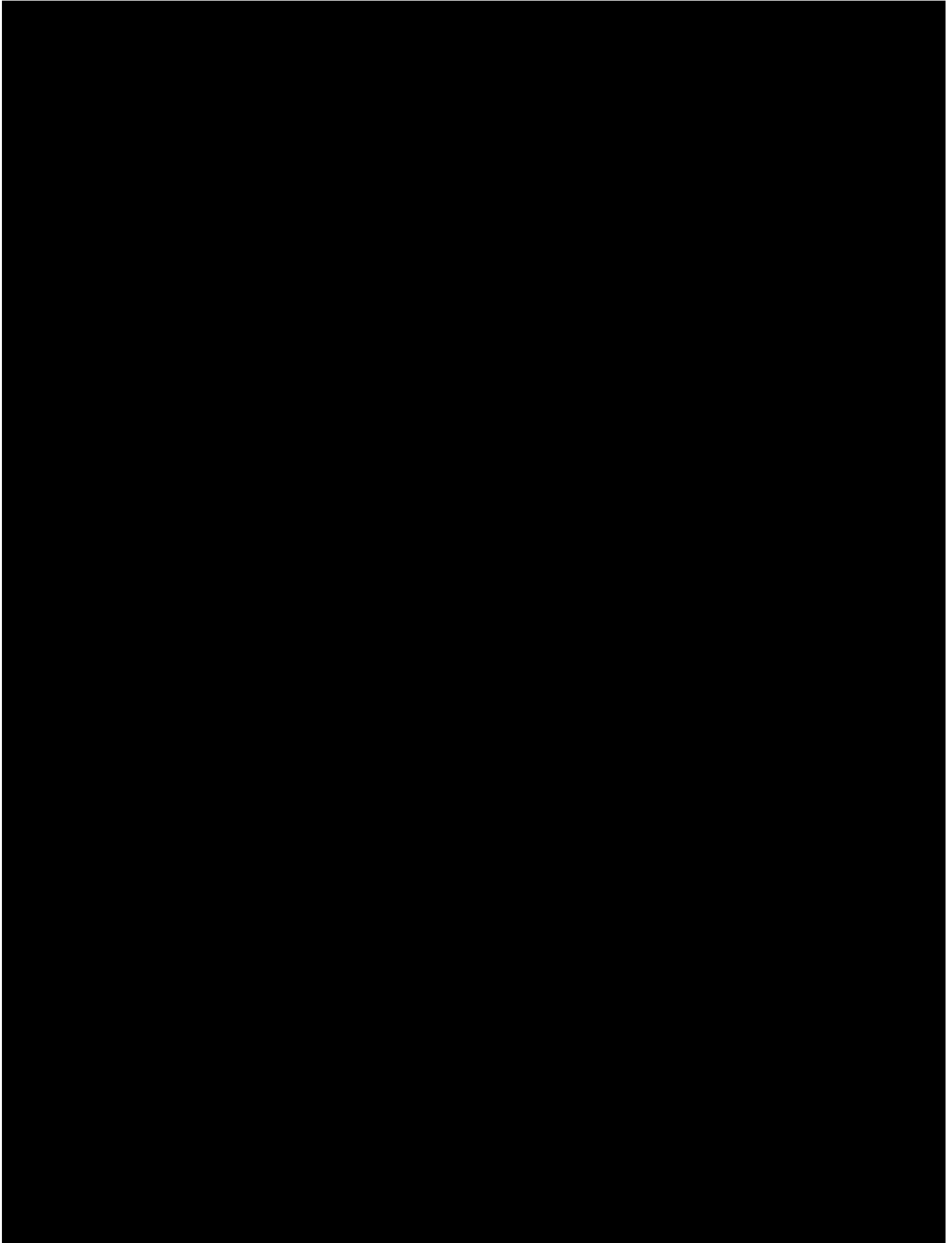




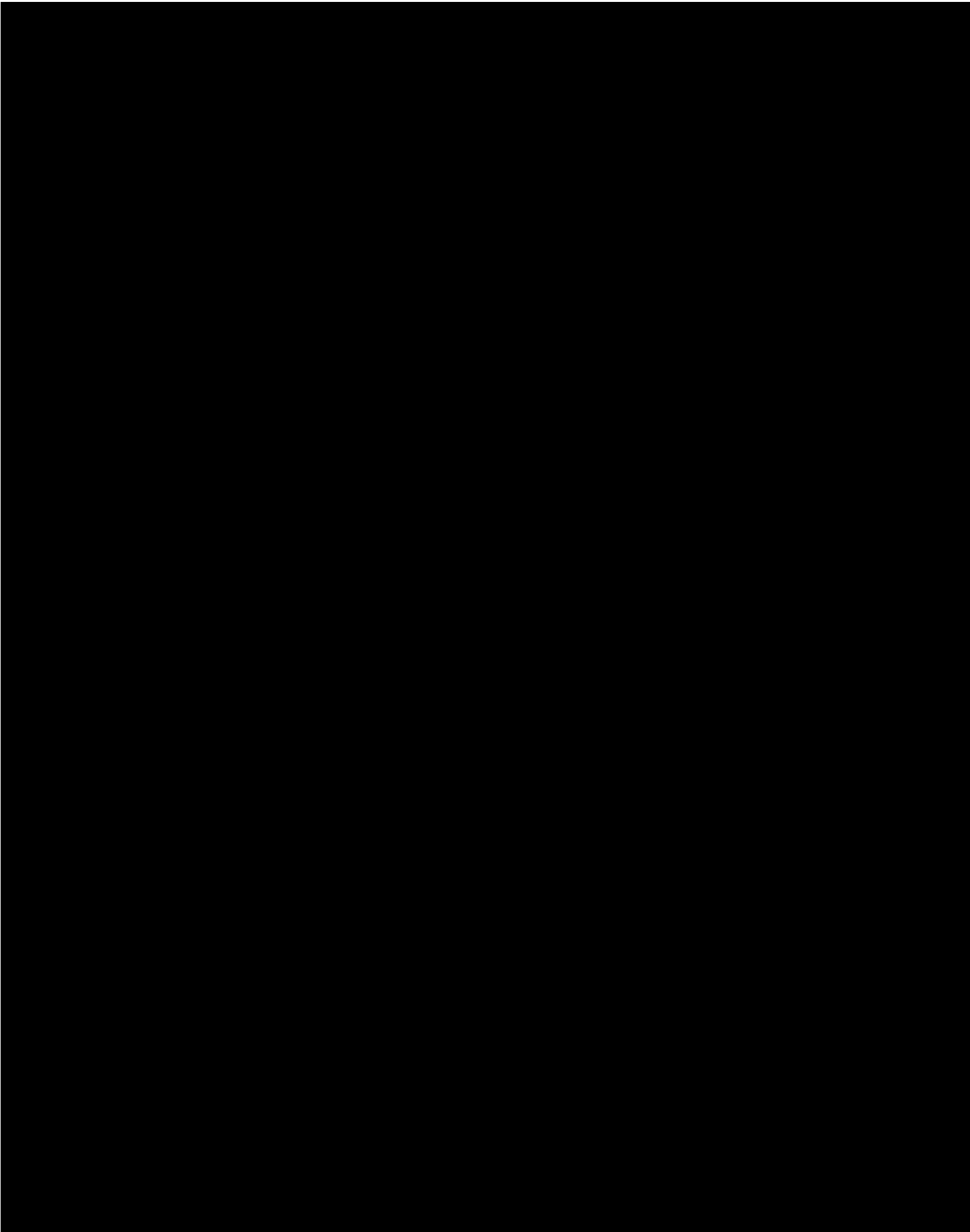












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11 Q. I know we talked about Quarter 2 2021  
12 alone. Has Google Display ads continued to grow even  
13 after Quarter 2 of 2021?

14 A. If I recall, yes, through the rest of  
15 2021 and some of 2022.

16 These numbers are much higher than --  
17 growth now, because this -- remember what was  
18 happening in -- these are year-over-year numbers, and  
19 remember what was happening in the world Q2 2020? So  
20 these are comparing to big drops the prior year.

21 So these growth rates are not  
22 reflective of what's normal for the Display business.

23 The Display business this year is  
24 declining modestly year over year.

25 Q. What do you attribute that to?

16 MS. SESSIONS: I'm sorry. Can you just  
17 ask that full question again, please?

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1 A. Tough economy. Less growth in  
2 post-COVID of consumer digital behavior. During  
3 COVID, everyone went online, spent a lot more time  
4 online. So the supply side has stopped growing as  
5 well at the rate that it did during COVID.

6 Q. Has there been a change in consumer  
7 behavior, meaning transitioning more to phone or  
8 video?

9 A. Yeah --

10 MS. SESSIONS: Object to the form.

11 A. Yeah. We certainly see continued user  
12 attention spent more in apps than on the web.

7 Q. (By Mr. Freeman) Since you've been at  
8 Google, to your knowledge, has Amazon developed and  
9 implemented a AdX competitor?

10 A. AdX, not DFP?

11 Q. Correct.

12 A. No.

13 There are -- anyway, there -- there are  
14 many public job listings, even in the press  
15 yesterday, for Amazon investing in building some sort  
16 of publisher ad infrastructure. But I don't know  
17 exactly what it is.

18 Q. Your information now about what Amazon  
19 is doing is just publicly related information?

20 A. Yep.

21 Q. Do you remember particularly what  
22 source that was that you read?

23 A. It was just -- it was in trade press.  
24 I don't know which one, but it's all just links to  
25 the Amazon job site.

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[REDACTED]

7 **Q. Do you know how the price that they**  
8 **agreed on was reached?**  
9 A. No idea.  
10 **Q. I know we talked about this, I think,**  
11 **in the morning, about -- about last look.**  
12 **Are you aware of whether Google ever**  
13 **implemented last look?**  
14 A. Nope.  
15 **Q. Are you familiar with the term Admeld,**  
16 **meaning A-d-m-e-l-d?**  
17 A. It was a company, I believe, that  
18 Google acquired.  
19 **Q. Do you know why they acquired them?**  
20 A. I don't remember.  
21 **Q. Did that predate your time there?**  
22 A. Yeah.  
23 **Q. Do you know the term or project,**  
24 **Project Bell, B-e-l-l?**  
25 A. No, I don't.

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1 **Q. What about Project Poirot, meaning**  
2 **P-o-i-r-o-t?**  
3 A. I know I've seen that name. I don't  
4 know what it means, though.  
5 **Q. Do you know the phrase "dynamic**  
6 **allocation"?**  
7 A. Yes.  
8 **Q. What's your understanding of dynamic**  
9 **allocation?**  
10 A. I explained this in our prior session.  
11 Large publishers monetize through a mix of direct  
12 sold and then indirect demand that comes in through  
13 the exchange.  
14 The direct sold demand is typically a  
15 contract to deliver a certain amount -- number of  
16 impressions at a certain price.  
17 Quite often, you'll have indirect  
18 demand coming in from the exchange that's bidding  
19 higher than those contracted fixed prices. And there  
20 will be cases where you will choose to serve the  
21 lower-priced ad that was contractually committed  
22 because it's contractually committed to deliver a  
23 certain amount by a certain date, even though, if you  
24 were to ignore that, the publisher could make more  
25 money by letting in an ad from the exchange.

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1 There's a concept called pacing and  
2 you -- for those direct sold demands that are  
3 contractually committed, the ad server -- it says,  
4 I've got a week to deliver a million impressions.  
5 The advertiser wants them to deliver smoothly by day.  
6 They don't want me to deliver seven days of  
7 impressions in one day. They want to spread them out  
8 evenly. So the ad server's keeping track of that.  
9 And if something's under-pacing, so  
10 we're behind schedule in delivering on that  
11 contractual commitment, that potentially lower price  
12 contracted fixed-price ad may serve instead of the  
13 higher-priced ad that comes in from the exchange.  
14 That's the dynamic allocation, rather  
15 than a simple sorting of prices.  
16 **Q. Are you familiar with the term**  
17 **"realtime bidding"?**  
18 A. Yes.  
19 **Q. What does that mean?**  
20 A. Realtime bidding is how ad exchanges  
21 offer up the opportunity for many -- multiple buying  
22 platforms, tens or hundreds, commonly, on every  
23 single potential impression to bid for a potential  
24 impression on a publisher website or app.  
25 **Q. And I think you mentioned this in the**

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1 morning, but was there a period of time where  
2 auctions were done by what was commonly referred to  
3 as "waterfall"?  
4 A. Yes.  
5 **Q. Can you describe to me the difference**  
6 **between realtime bidding versus waterfall?**  
7 A. Realtime bidding is letting multiple  
8 demand sources, many DSPs, and then the many, many  
9 advertisers using those DSPs -- so it's hundreds,  
10 thousands of advertisers -- to compete in parallel  
11 for a given impression.  
12 Whereas a waterfall is -- you would  
13 take each demand source -- in the pre-DSP days, it  
14 would be an ad network that had aggregated advertiser  
15 demand -- and you would put them in the order you  
16 think would -- who would most often pay the most for  
17 ad impressions, and then the next most, the next  
18 most.  
19 And so if ad network A that you  
20 scheduled first in mediation couldn't fill an ad  
21 impression, the waterfall goes to the next one and  
22 goes to the next one. And the art and science of  
23 that is learning what order to put them in.  
24 **Q. Is waterfall still implemented today?**  
25 A. I'm not aware of it in the web.



REPORTER'S CERTIFICATE

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I, Matthew R. Moss, a Registered Professional Reporter, Federal Certified Realtime Reporter, and Notary Public within and for the State of Colorado, commissioned to administer oaths, do hereby certify that previous to the commencement of the examination, the witness was duly sworn by me to testify the truth in relation to matters in controversy between the said parties; that the said deposition was taken in stenotype by me at the time and place aforesaid and was thereafter reduced to typewritten form by me; and that the foregoing is a true and correct transcript of my stenotype notes thereof.

That I am not an attorney nor counsel nor in any way connected with any attorney or counsel for any of the parties to said action nor otherwise interested in the outcome of this action.

My commission expires: April 28, 2025.

Matthew Moss

MATTHEW R. MOSS  
Registered Professional Reporter  
Federal Certified Realtime Reporter  
and Notary Public

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**ERRATA SHEET FOR THE TRANSCRIPT OF TIM CRAYCROFT**

Case Name: In Re: Google Antitrust Investigation

Dep. Date: August 15, 2023

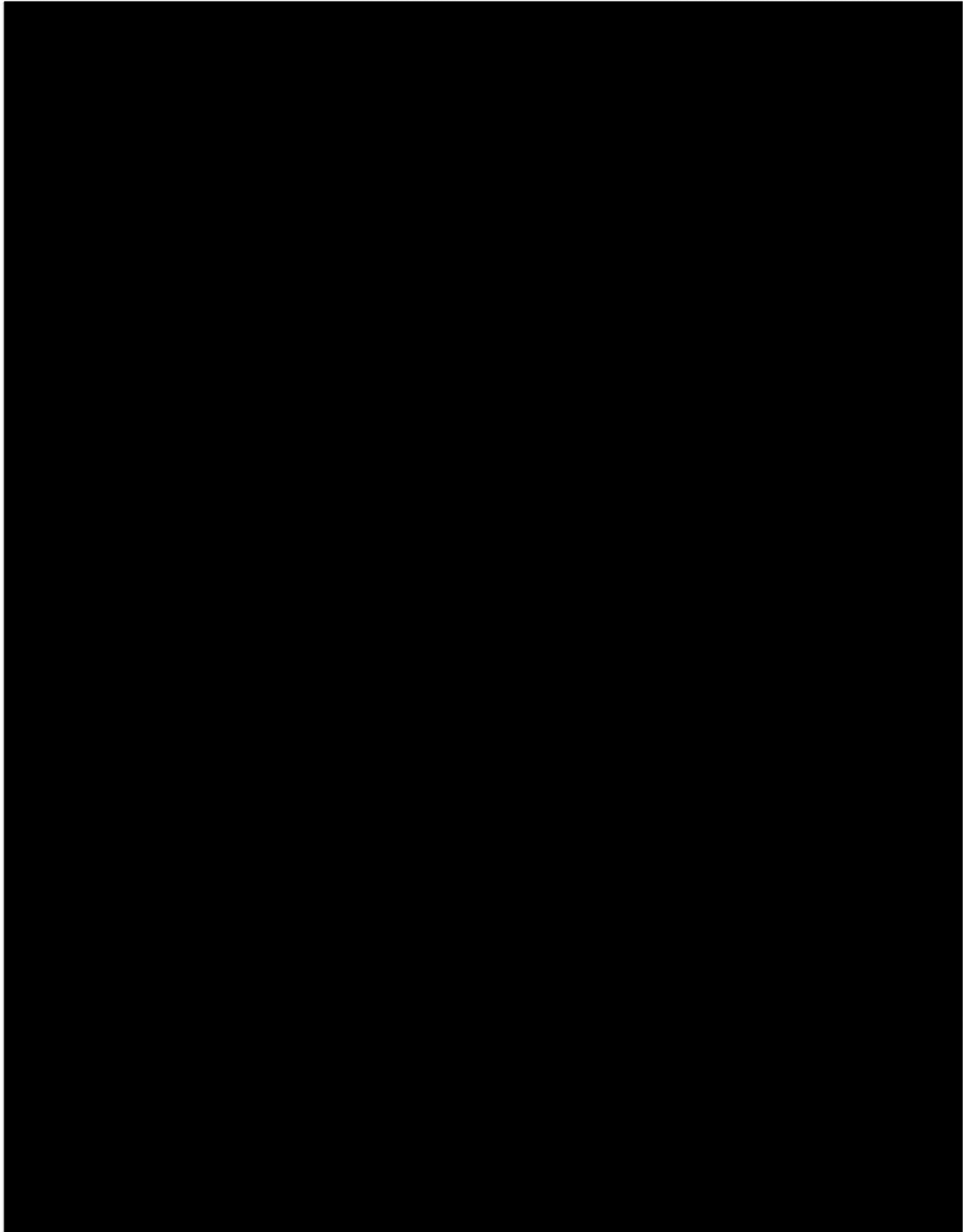
Deponent: Tim Craycroft

<b>Page</b>	<b>Line</b>	<b>Correction</b>	<b>Reason for Correction</b>
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Page	Line	Correction	Reason for Correction
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HIGHLY CONFIDENTIAL

Page	Line	Correction	Reason for Correction
126	5	Change “of” to “at”	Transcription error
160	6	Change “define” to “explain”	Transcription error
160	20	Change “as well as” to “as well as things like”	Transcription error
168	24	Change “T-row” to “tROAS”	Transcription error
169	3	Change “on” to “to”	Transcription error



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I have inspected and read my deposition and have listed all changes and corrections above, along with my reasons therefore.

Date: 9/8/23

Signature: 